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Sequence Listing could not be accepted due to errors.

See attached Validation Report.

If you need help call the Patent Electronic Business Center at (866) 217-9197 (toll free).

Reviewer: markspencer

Timestamp: [year=2008; month=7; day=17; hr=15; min=19; sec=55; ms=898;]

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Reviewer Comments:

210> 17

<211> 69

<212> DNA

<213> modified E. coli thermostable enterotoxin II signal sequence

* * * * *

Numeric identifier <213> can only be one of three choices, "Scientific name, i.e. Genus/species, Unknown or Artificial Sequence." SEQ ID # 24 has this same error.

numeric identifier <160> indicates there are 36 sequences in this sequence listing, "<160> 36." The actual number counted is 35 sequences. Please make all necessary changes to correct this error.

Application No: 10576068 Version No: 2.0

Input Set:**Output Set:**

Started: 2008-06-18 15:56:48.933
Finished: 2008-06-18 15:56:50.717
Elapsed: 0 hr(s) 0 min(s) 1 sec(s) 784 ms
Total Warnings: 35
Total Errors: 1
No. of SeqIDs Defined: 36
Actual SeqID Count: 35

| Error code | Error Description |
|------------|---|
| W 213 | Artificial or Unknown found in <213> in SEQ ID (1) |
| W 213 | Artificial or Unknown found in <213> in SEQ ID (2) |
| W 213 | Artificial or Unknown found in <213> in SEQ ID (3) |
| W 213 | Artificial or Unknown found in <213> in SEQ ID (4) |
| W 213 | Artificial or Unknown found in <213> in SEQ ID (5) |
| W 213 | Artificial or Unknown found in <213> in SEQ ID (6) |
| W 213 | Artificial or Unknown found in <213> in SEQ ID (7) |
| W 213 | Artificial or Unknown found in <213> in SEQ ID (8) |
| W 213 | Artificial or Unknown found in <213> in SEQ ID (9) |
| W 213 | Artificial or Unknown found in <213> in SEQ ID (10) |
| W 213 | Artificial or Unknown found in <213> in SEQ ID (11) |
| W 213 | Artificial or Unknown found in <213> in SEQ ID (12) |
| W 213 | Artificial or Unknown found in <213> in SEQ ID (13) |
| W 213 | Artificial or Unknown found in <213> in SEQ ID (14) |
| W 213 | Artificial or Unknown found in <213> in SEQ ID (15) |
| W 213 | Artificial or Unknown found in <213> in SEQ ID (16) |
| W 402 | Undefined organism found in <213> in SEQ ID (17) |
| W 213 | Artificial or Unknown found in <213> in SEQ ID (18) |
| W 213 | Artificial or Unknown found in <213> in SEQ ID (19) |
| W 213 | Artificial or Unknown found in <213> in SEQ ID (20) |

Input Set:

Output Set:

Started: 2008-06-18 15:56:48.933
Finished: 2008-06-18 15:56:50.717
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Total Warnings: 35
Total Errors: 1
No. of SeqIDs Defined: 36
Actual SeqID Count: 35

| Error code | Error Description |
|------------|--|
| W 213 | Artificial or Unknown found in <213> in SEQ ID (21) This error has occurred more than 20 times, will not be displayed |
| W 402 | Undefined organism found in <213> in SEQ ID (24) |
| E 252 | Calc# of Seq. differs from actual; 36 seqIds defined; count=35 |

SEQUENCE LISTINGS

<110> Hanmi Pharm. Co., Ltd.

<120> EXPRESSION VECTOR FOR SECRETING ANTIBODY FRAGMENT USING E. COLI
SIGNAL SEQUENCE AND METHOD FOR MASS-PRODUCING ANTIBODY FRAGMENT

<130> Q94300

<140> 10576068

<141> 2008-06-18

<150> KR1020030072216

<151> 2003-10-16

<150> PCT/KR04/02625

<151> 2004-10-14

<160> 36

<170> KopatentIn 1.71

<210> 1

<211> 75

<212> DNA

<213> Artificial Sequence

<220>

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ggggacagag tcacc 75

<210> 2

<211> 80

<212> DNA

<213> Artificial Sequence

<220>

<223> gene fragment of light chain variable region

<400> 2

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ggtgactctg tcccctacag 80

<210> 3

<211> 80

<212> DNA

<213> Artificial Sequence

<220>
 <223> gene fragment of light chain variable region

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<210> 4
 <211> 80
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> gene fragment of light chain variable region

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 agatgggacc cctgattgca 80

<210> 5
 <211> 80
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> gene fragment of light chain variable region

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 caccgtatac ttttggccag 80

<210> 6
 <211> 41
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> gene fragment of light chain variable region

<400> 6
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<210> 7
 <211> 75
 <212> DNA

<213> Artificial Sequence

<220>

<223> gene fragment of heavy chain variable region

<400> 7

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aggtccctga gactc 75

<210> 8

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<212> DNA

<213> Artificial Sequence

<220>

<223> gene fragment of heavy chain variable region

<400> 8

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gagtctcagg gacctgccg 79

<210> 9

<211> 80

<212> DNA

<213> Artificial Sequence

<220>

<223> gene fragment of heavy chain variable region

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atagtgtca catagactat 80

<210> 10

<211> 80

<212> DNA

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<223> gene fragment of heavy chain variable region

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atagtctatg tgaccactat 80

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 <213> Artificial Sequence

 <220>
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 attactgtgc gaaagtctcg 80

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 <211> 84
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 <220>
 <223> gene fragment of heavy chain variable region

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 ggtacgagac tttcgcacag taat 84

 <210> 13
 <211> 39
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> RT-PCR forward primer specific for heavy chain

 <400> 13
 cccaagctta ggctccacc aagggcccat cggtcttcc 39

 <210> 14
 <211> 48
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> RT-PCR reverse primer specific for heavy chain

 <400> 14
 gggggatcct tatgggcacg gtgggcatgt gtgagttttg tcacaaga 48

 <210> 15

<211> 42
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> RT-PCR forward primer specific for light chain

 <400> 15
 cccaagcttt cggaactgt ggctgcacca tctgtcttca tc 42

 <210> 16
 <211> 42
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> RT-PCR reverse primer specific for light chain

 <400> 16
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 <210> 17
 <211> 69
 <212> DNA
 <213> modified E. coli thermostable enterotoxin II signal sequence

 <400> 17
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 gcccaggcg 69

 <210> 18
 <211> 45
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> forward primer containing StuI restriction enzyme site

 <400> 18
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 <210> 19
 <211> 45
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> reverse primer containing StuI restriction enzyme site

<400> 19
 agataacgat gtttacgggt ccggaagggt tggtaaggga atagg 45

<210> 20
 <211> 51
 <212> DNA
 <213> Artificial Sequence

<220>
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<400> 20
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<210> 21
 <211> 43
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> forward primer containing SD sequence and BamHI restriction enzyme site

<400> 21
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<210> 22
 <211> 44
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> forward primer containing BpuI restriction enzyme site

<400> 22
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<210> 23
 <211> 52
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> reverse primer containing BpuI restriction enzyme site

<400> 23
 ggggctcagc tcacgcggcg catgtgtgag ttttgtcaca agatttaggc tc 52

<210> 24
 <211> 63
 <212> DNA
 <213> E. coli OmpA signal sequence

<400> 24
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 gct 63

<210> 25
 <211> 30
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> forward primer specific for heavy chain

<400> 25
 gaggttcagc tagtcgagtc aggaggcggc 30

<210> 26
 <211> 51
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> forward primer containing HindIII and StuI restriction enzyme sites

<400> 26
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<210> 27
 <211> 30
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> reverse primer containing stop codon and BamHI restriction enzyme site

<400> 27
 gacattcaaa tgaccagag cccatccagc 30

<210> 28
 <211> 42
 <212> DNA
 <213> Artificial Sequence

<220>

<223> forward primer containing HindIII and NruI restriction enzyme sites

<400> 28
cccagatctc taacactctc ccctgttgaa gctctttgtg ac 42

<210> 29
<211> 41
<212> DNA
<213> Artificial Sequence

<220>

<223> reverse primer containing stop codon and BamHI restriction enzyme site

<400> 29
ggggtcgaca ggaggtgatt tatgaaaaag acagctatcg c 41

<210> 30
<211> 51
<212> DNA
<213> Artificial Sequence

<220>

<223> reverse primer containing SalI restriction enzyme site

<400> 30
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<210> 31
<211> 42
<212> DNA
<213> Artificial Sequence

<220>

<223> forward primer specific for modified E. coli enterotoxin II signal peptide and containing NdeI restriction enzyme site

<400> 31
gggcatatga aaaagacaat cgcatttctt cttgcatcta tg 42

<210> 32
<211> 705
<212> DNA
<213> Artificial Sequence

<220>

<223> TNF-alpha heavy chain

<400> 32

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ccaggaaggg gcctggaatg ggtctcagct atcacttggg atagtgggtc catagactat   180
gcggactctg tggaggggccc attcaccatc tccagagaca acgccaagaa ctccctgtat   240
ctgcaaatga acagtctgag agctgaggat acggccgtat attactgtgc gaaagtctcg   300
taccttagca ccgcgtcttc ccttgactat tggggccaag gtaccctggg caccgtctcg   360
agtgcctcca ccaagggccc atcgggtcttc cccctggcac cctcctccaa gagcacctct   420
gggggcacag cggccttggg ctgcctgggc aaggactact tccccgaacc ggtgacgggtg   480
tcgtggaact caggcgccct gaccagcggc gtgcacacct tcccggctgt cctacagtcc   540
tcaggactct actcctcag cagcgtgggt accgtgccct ccagcagctt gggcaccag   600
acctacatct gcaacgtgaa tcacaagccc agcaacacca aggtggacaa gaaagttgag   660
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<210> 33

<211> 645

<212> DNA

<213> Artificial Sequence

<220>

<223> TNF-alpha light chain

<400> 33

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gggaaagccc ctaagctcct gatctatgct gcatccactt tgcaatcagg ggtcccatct   180
cggttcagtg gcagtggatc tgggacagat ttcactctca ccatcagcag cctacagcct   240
gaagatgttg caacttatta ctgtcaaagg tataaccgtg caccgtatac ttttggccag   300
gggaccaagg tggaatcaa acgaactgtg gctgcaccat ctgtcttcat cttcccgcga   360
tctgatgagc agttgaaatc tggaactgcc tctgttgtgt gcctgtgaa taacttctat   420
cccagagagg ccaaagtaca gtggaaggtg gataacgccc tccaatcggg taactcccag   480
gagagtgatc cagagcagga cagcaaggac agcacctaca gcctcagcag caccctgacg   540
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ctgagcaaag cagactacga gaaacacaaa gtctacgcct gcgaagtcac ccatcagggc 600

ctgagctcgc ccgtcacaaa gagcttcaac aggggagagt gttag 645

<210> 34

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<223> Recombinant light chain of TNF-alpha Fab'

<400> 34

Asp Ile Gln Met Thr Gln Ser

1 5

<210> 35

<211> 8

<212> PRT

<213> Artificial Sequence

<220>

<223> Recombinant heavy chain of TNF-alpha Fab'

<400> 35

Glu Val Gln Leu Glu Val Asp Ser

1 5